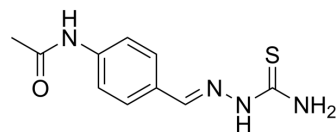


Thiacetazone

Cat. No.:	HY-B1526		
CAS No.:	104-06-3		
Molecular Formula:	C ₁₀ H ₁₂ N ₄ OS		
Molecular Weight:	236.29		
Target:	Bacterial; Antibiotic		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (423.21 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
	Preparing Stock Solutions		10 mg	
	1 mM	4.2321 mL	21.1604 mL	42.3209 mL
	5 mM	0.8464 mL	4.2321 mL	8.4642 mL
	10 mM	0.4232 mL	2.1160 mL	4.2321 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution 			

BIOLOGICAL ACTIVITY

Description	Thiacetazone (Thioacetazone) is a thiourea-containing antitubercular agent and is an orally active antibiotic. Thiacetazone has antibacterial action, which inhibits growth of <i>Mycobacterium tuberculosis H37Rv</i> with a MIC value of 0.1 µg/mL ^[1] .
IC₅₀ & Target	MIC: 0.1 µg/mL (<i>Mycobacterium tuberculosis H37Rv</i>) ^[1]
In Vitro	Thiacetazone is a prodrug that is activated by the mycobacterial monooxygenase EthA, which is also the activator of two other anti-tuberculosis agents, Ethionamide and Isoxyl ^[3] .

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

The K_m and V_{max} values for the N-deacetylation of Thiacetazone are 0.57 mM and 0.123 nmol of p-aminobenzaldehydethiosemicarbazone formed/min/mg cytosolic protein, respectively. The ability to metabolize Thiacetazone is the same in the livers of cat, mouse and human, but lagged significantly in that of rat^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. J L Stigliani, et al. New Insights Into the Chemical Behavior of S-oxide Derivatives of Thiocarbonyl-Containing Antitubercular Drugs and the Influence on Their Mechanisms of Action and Toxicity. *Ann Pharm Fr.* 2019 Mar;77(2):126-135.
- [2]. P Khanna, et al. Characteristics of a Cytosolic Arylacylamidase Metabolizing Thiacetazone. *J Pharmacol Exp Ther.* 1992 Sep;262(3):1225-31.
- [3]. Anuradha Alahari, et al. Thiacetazone, an Antitubercular Drug That Inhibits Cyclopropanation of Cell Wall Mycolic Acids in Mycobacteria. *PLoS One.* 2007 Dec 19;2(12):e1343.
- [4]. C A Peloquin, et al. Pharmacokinetic Evaluation of Thiacetazone. *Pharmacotherapy.* Sep-Oct 1996;16(5):735-41.
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Caution: Product has not been fully validated for medical applications. For research use only.

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